iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 8 **Issue:** III **Month of publication:** March 2020

DOI:

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 8 Issue III Mar 2020- Available at www.ijraset.com

Survey Paper on Avatar: Mobile Distributed Computing in the Cloud

Arvind Sriram G[1], Rahul N[2], Reddy Eshwar[3], Srinivas D M[4], Dr. M. Vinoth Kumar[5]
[1, 2, 3, 4]*BE Students,* [5]*Associate Professor, Department Of Information Science and Engineering, Dayananda Sagar Academy of Technology and Management, Bangalore, Karnataka India*

Abstract: ***Avatar is virtual mobile platform where in which user can use app which is available in Playstore or Appstore on cloud instead on their electronic devices. The use this is , nowadays we are in a world in which day to day a phone is released with different internal storage and it's not possible to upgrade every time .To resolve this problem, Avatar uses cloud technology along with virtual machine ,in which an android software or IOS software is running. A user jump from one storage facilities to another due to the use of cloud. Avatar is an android application which should be installed in users physical electronic devices. With the applications help the user is connected to the cloud. Cloud technology is used to store the application downloaded by the user. Virtual Machine is connected to the cloud and is installed with android software.***

I. INTRODUCTION

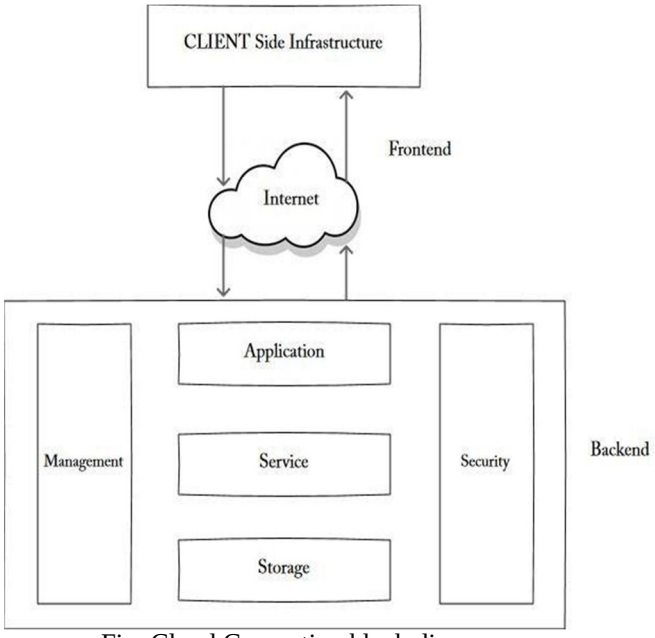


Fig: Cloud Computing block diagram

Cloud Computing is set of remote server on the internet to store and process data, rather than in personal computer. It is used to describes data centers that is freely present for many user over the Internet. Large clouds, are omnipresent nowdays which have functions and is spread over different locations from the central server. Depending on the user location the connection is made to the nearest edge server. Cloud Computing depends on sharing resources to reach coherence. Availability of high-capacity networks, low cost computers, storage devices, service oriented architecture has given the way to the growth of cloud computing. Virtual Machine is surpasses the goal of computer systems. Virtual Machines formed on computer architectures and provides the use of physical computer. Virtual Machine implementation includes specialized hardware, software or both combined together. Substitute for Real machine can be System virtual machines, they provide functionality required to execute entire OS. Hypervisor uses native technique of execution to share and allow many environments to be isolated from one another yet be in the same physical machine. New hypervisors use hardware-assisted virualization and specific hardware manily from CPU that hosts. To execute computer programs in platform independent space process virtual machines are used.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 8 Issue III Mar 2020- Available at www.ijraset.com

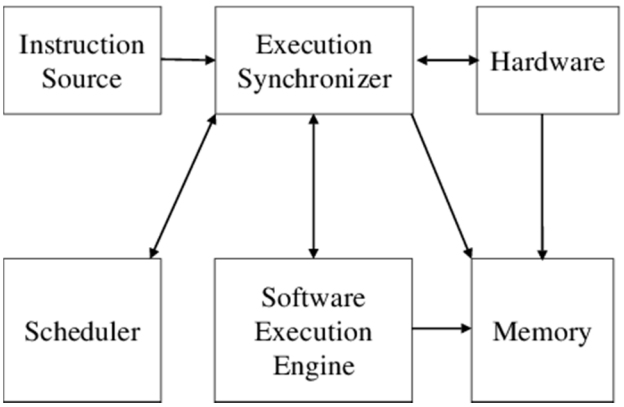


Fig: Virtual machine block diagram

Android is a mobile operating system which is developed version of Linux Kernel and various open source software. These are mainly developed for touchscreen devices such as mobile and tablets. Android software is designed and developed by group of develops known as Open Handset Alliance, whose main contributor is Google. Android source code is used for various ecosystems. Mostly Google has joined hands with number of proprietary software who are called as Google Mobile Services, which comes pre installed in the electronic devices. Some of them are Gmail, Google Play that is associated with Google Play Services and google Chrome which is a browser.

II. METHODOLOGY

A. *Virtual Machine*

Virtual machines definition: It is a type of operating software in which an other operating system can be used. Virtual machines are categorized into two groups as Process Virtual Machine and System Virtual Machine.[2]

1) *Process Virtual Machines:* Process virtual machine it had been designed to run a single program in single process it runs as a regular application within the host OS as process. Virtual machine will be started when the process is started and it destroys when process exists. Virtual machine is platform independent development environment.
2) *System Virtual machine:* System virtual machine is a complete hardware working platform for the execution of the complete Operating system.

Multiple operating system which runs their environments in parallel on the same hardware with strong isolation with each other.

Classification of the Virtualization techniques.

There are four types of virtualization techniques.

a) Hardware or Platform Virtualization
b) Network Virtualization
c) Application Virtualization
d) Desktop Virtualization

Different types of hardware virtualization include:

i) Full virtualization: virtual machine which of simulation to the physical machine. This allows the guest operating system to run unmodified.
ii) Partial virtualization: Partial Virtualization simulates some of the resources of the actual hardware. So, some programs on the guest need to be modified for execution in environment.
iii) Para virtualization: In this technique the guest programs run within in their own separate region, though they are isolated. Guest programs should be specifically modified to run in this environment.

3) *Network Virtualization:* Network Virtualization provides an virtual network environment. Application Virtualization: Application virtualization provides an idea that the traditional applications will wrapped inside a container. Desktop
4) Virtualization: In desktop virtualization, the traditional desktop is virtualized and moves the work load of the client to the data center. Different means, like thin-client etc. are used to access these workloads.

ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.429
Volume 8 Issue III Mar 2020- Available at www.ijraset.com

B. Android

Android is a Google-developed mobile computing system developed by Google is based on the Linux kernel. Android is mainly focused on smartphones and tablet computer. Source code for Android is published under open source licenses by Google. Android devices comes with a combination of open source and proprietary software mix that includes software developed and licensed by Google. Android's open nature has got huge base of community of developers.

C. Architecture: Linux Kernel

System features include process management, memory management, camera like device management, keypad. Kernel can take care of things like networking and a wide range of device drivers that take the pain out of the peripheral hardware interface.

D. Libraries

The Linux kernel is a series of libraries such as WebKit, the well known library, SQLite server, a valuable repository for storing and sharing of application data, libraries to playback and recording audio and video.

E. Android Runtime

Android Runtime is the third segment and accessible from the bottom on the second layer. The Android runtime also provides a set of core libraries that allow developers of the Android apps to code Android apps using standard Java programming language.

F. Application Framework

Provides many higher-level services for Java class applications. Application developers are allowed in their applications to make use of these resources.

G. Security And Privacy

Android systems use sandbox, a system's isolated area that has no access to the rest of the system's resources, unless the user expressly grants access privileges when the software is installed. Playstore shows permission for that application before downloading.[8]

H. Cloud

In computing, cloud computing was planned because the next generation model. The National Institute of Standards and Technology (NIST) clarification of 'cloud computing' is that cloud computing allows convenient on-demand network access to a shared pool of configurable computing resources which will be delivered quickly with negligible management or service supplier effort. For computing, cloud computing was planned because the next generation model each package and resources are distributed as services for the asking over the net within the cloud computing atmosphere. Cloud is associate degree environmentally friendly computing tool within the center of data that provides varied services over the requirements of the net user.

I. Data Integrity

In general, knowledge integrity means that protective data from licensed, modification, or fabrication is one amongst the foremost essential components any system. in an exceedingly standalone system with one information, data consistency is well achieved. knowledge integrity within the stand alone system is maintained by information constraints and transactions. Approval is employed to manage knowledge access. it's the mechanism through that a system determines the amount of access a specific attested user ought to got to secure system-controlled resources.

J. Data Confidentiality

For users to store their personal or confidential knowledge within the cloud, knowledge confidentiality is vital. to take care of data privacy, coding and access management ways are used. Since users don't trust cloud suppliers and cloud storage service providers are much not possible to eliminate potential business executive risk, storing their sensitive knowledge directly in cloud storage is extremely risky for users. Data Availability: knowledge accessibility suggests that the following: once accidents like disc harm, IDC fire, and network failures occur, the extent to that user knowledge will be used or recovered, and the way users verify their knowledge victimisation techniques instead of relying alone on the cloud service provider's credit guarantee. the difficulty of storing knowledge across the trans boarder servers may be a serious concern for patrons as cloud vendors are ruled by native laws and thus cloud shoppers ought to bear in mind of these laws. Locating knowledge will facilitate users build confidence within the cloud.

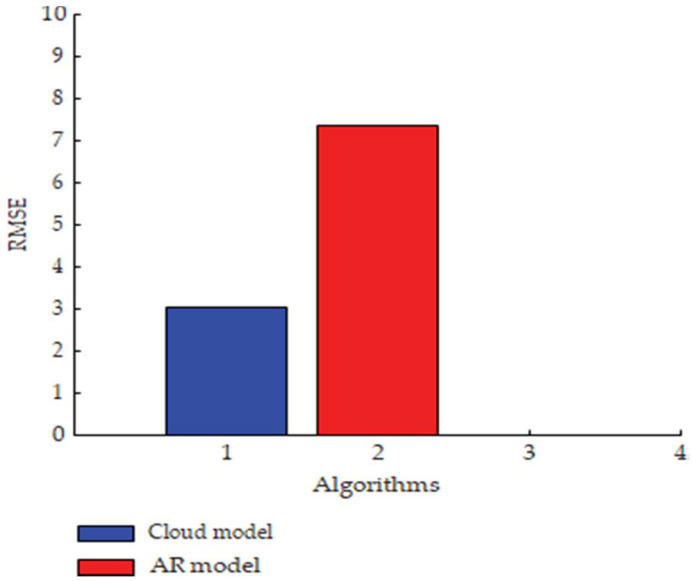
Data Privacy: Privacy may be a person or group's ability to by selection disclose themselves or info regarding themselves. the subsequent things are connected to privacy. a subject matter is also additional distressed regarding the discharge of current or future knowledge than past info. How: a user is also happy if his / her friends could fire his / her details manually, however the user might not wish to receive automatic and regular updates. Extent: rather than having a particular purpose, a shopper could have his / her knowledge known as associate degree indefinite space. Privacy within the cloud implies that once users access sensitive knowledge, cloud services could stop future advertisers from inferring the actions of the user through the visit model of the user (not direct knowledge leakage). Researchers targeted on the engineering of Oblivian RAM (ORAM).Cloud computing provides a platform for the utilization of a large vary of net primarily based services. however additionally to its advantages, once a trusty third party is concerned, it conjointly raises the safety threat. a possible answer to the current drawback may well be to use a esteemed neutral third party approach to Identity Management to use identity info on untrusted hosts.[1]

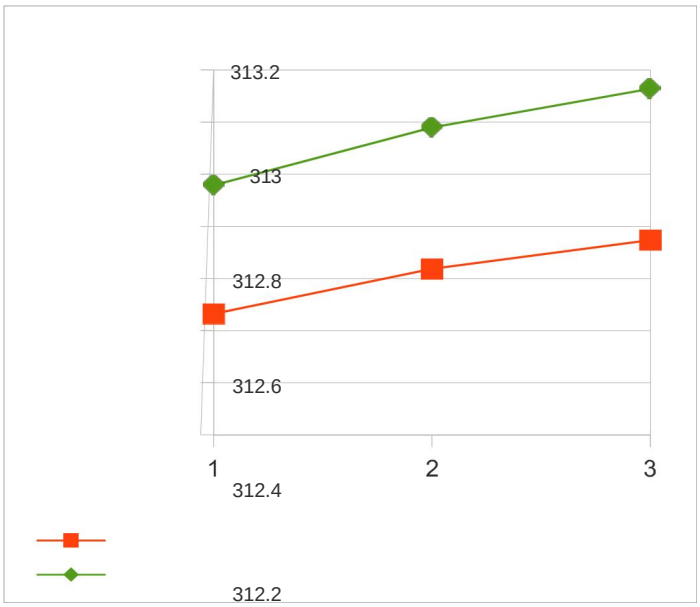
III. CONCLUSION

This paper introduced the Avatar platform allowed by a new cloud architecture for mobile distributed computing. The aim of this project is to solve a long standing problem how to achieve the real potential of mobile distributed computing given its many challenges such as resource limitations, flexibility, and mobile data sensitivity? Our approach is based on integrating all a user's mobile devices with an avatar in the cloud and dynamically deciding on the application execution plan in addition to a decentralized network made up of avatars and mobile devices. They also discuss cloud infrastructure and privacy issues in addition to the software and middle-ware problems. This paper introduced the Avatar platform allowed by a new cloud architecture for mobile distributed computing.

IV. RESULT

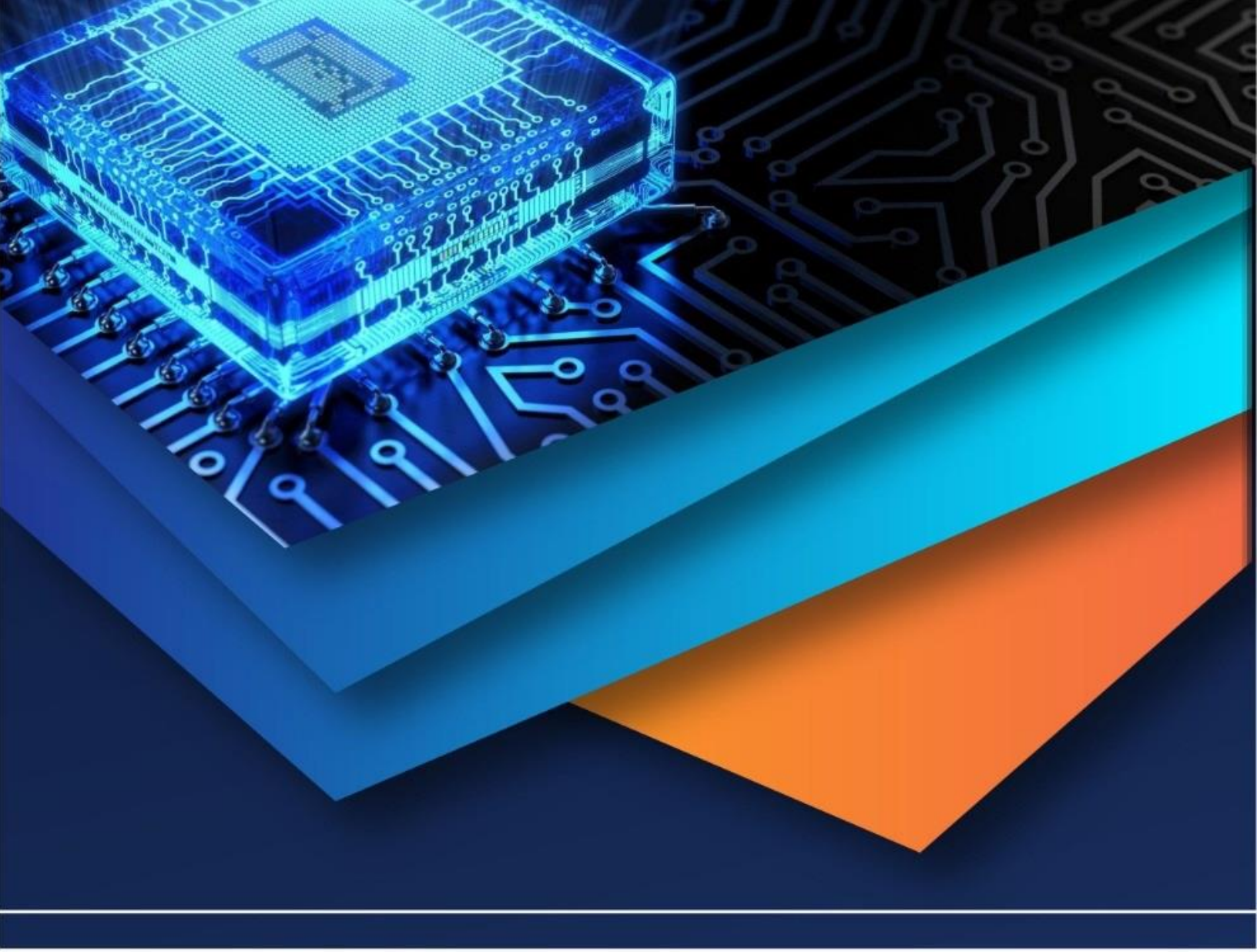
The test was performed by compiling both configurations of the Apache source file in the Virtual Machines. It was found that when pinned to the heart, the performance of the Virtual Machines was higher. If the core is pinned, the standard deviation is 0.8and 0.11 if the processor is not pinned. And if the core is locked, the standard deviation is 0.5 so 0.6 if the core is not pinned. The test was performed by compiling all versions of the Apache source directory in the Virtual Machines. It was found that when pinned to the heart, the performance of the Virtual Machines was higher Simulation tests were performed to test the efficacy of our cloud-based time series prediction workload algorithm compared to the auto regressive (AR) time series prediction model. Data collected via the popular cloud computing simulation software Cloud Sim in conjunction with Planet Lab's global network platform are used to predict future workload trends for host machines While being designed differently and having separate functionality and suitability, both MAE and RMSE provide anindicator as to how well the predication results represent the actual data. A larger MAE value or RMSE value means that the predictive results complement the actual data more closely and are there fore superior.Because of their volatile and discrete existence, the workload data originally collected were processed by the procedure of differences and the normalization before being used to produce the predictions.[6]





REFERENCES

[1] "Layered virtual machine migration algorithm for network resource balancing in cloud computing" Xiong FU 1,2, Juzhou CHEN1, Song DENG 3, Junchang WANG1, Lin ZHANG1,2016
[2] Performance Analysis of Kernal-bases Virtual Machine" Sudha M1, Harish G M2, Nandan A3, Usha J4 Vol 5, No 1, February2013
[3] A Belief Propagation-based Method for Task Allocation in Open and Dynamic Cloud Environments" Yan Konga, Minjie Zhangb, Dayong Yec October 17, 2016
[4] Data Security and Privacy in Cloud Computing" YunchuanSun,1JunshengZhang,2YongpingXiong, 3 andGuangyuZhu416July2014.
[5] A Virtual Machine Migration Strategy Based on Time Series Workload Prediction Using Cloud Model" YanbingLiu,1 BoGong,1 CongcongXing,2 andYiJian125September2014.
[6] Fair energy-efficient virtual machine scheduling for Internet of Things applications in cloud environment" Guowen Xing1,2, Xiaolong Xu1,2, Haolong Xiang3,4, Shengjun Xue1,2, Sai Ji1,2 and Jun Yang3,4 24 January2017
[7] Using Ant Colony Systemto Consolidate VMs for Green Cloud Computing" Fahimeh Farahnakian, Adnan Ashraf, Tapio Pahikkala, Pasi Liljeberg, Juha Plosila, Ivan Porres, and Hannu Tenhunen October 2014
[8] Android Application Development & Its Security" Shubhankar Mukherjee1, Prof. Jyoti Prakash2, Deepak Kumar3 IJCSMC, Vol. 4, Issue. 3, March 2015, pg.714 –719.
[9] M. Satyanarayanan, P. Bahl, R. Caceres, and N. Davies,"Thecaseforvm-basedcloudletsinmobile computing," IEEE Pervasive Computing, vol. 8, no. 4, pp. 14–23,2016
[10] Freedman, K. Nissim, and B. Pinkas, "Efficient private matching and set intersection,"In Advances in Cryptology EUROCRYPT2015.
[11] Cloud Computing Harshitha. K. Raj3.Volume 4, Issue 7, July 2014 ISSN: 2277128X.
[12] Survey Paper on "An Android Based Mobile Framework for Student Alert Notification"Sagar Gore1,Nitesh Sonawane2, Sayali Pawar3, Mrunal Nerkar4 Vol. 6, Issue 3, March2017.
[13] The Android - A Widely Growing Mobile Operating System With its Mobile based Applications Amit M. Farkade January-2015.
[14] A dynamic strategy-proof algorithm for allocation and pricing of cloud services Temidayo Omotehinwa; Joseph Shuaibu Sadiku10may2019



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY